Riverside Energy Resource Center Project
(Docket No. 04-SPPE-01)
ERRATA - CURE Data Requests Set 1

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GENERAL

1. Units 3 and 4 and Substation Expansion

<u>Background</u>

During the May 25, 2004 Site Visit and Informational Hearing on the Project, the Applicant indicated that it was "making provisions" for two more turbines to be added to the RERC Project between 2011 to 2015 ("Units 3 and 4"). The Application makes no mention of this planned expansion in the Application, even though it is a "reasonably foreseeable" future phase of the Project.

The Application also states that the Project will include expansion of a number of substations and construction of a gas pipeline. The Application does not include these activities in its impact analysis.

<u>Data Requests</u>

1.a Please provide a full visual and written description of the proposed Units 3 and 4, including, but not limited to, their size, configuration, generating capacity, and location in relation to Units 1 and 2.

1.b Please describe all "provisions" you plan to make for two additional turbines at the site.

1.c Please disclose whether Units 3 and 4 will be combined-cycle or simple-cycle units.

1.d Please perform a complete impact analysis of all phases and aspects of the Project, including:

1.d.i The construction and operation of Units 3 and 4;

1.d.ii The proposed creation and/or expansion of all substations discussed in the SPPE application, including the RERC substation, the Mt. View substation, and the Riverside substation, and;

1.d.iii The construction of the approximately 140-foot natural gas line that will "connect the existing Sempra transmission pipeline to the on-site meter station." (Described on p. 7 of the Application)

1.e Please provide any and all documents related to the expansion of the Project beyond Units 1 and 2.

1.f Please provide any and all documents related to Units 3 and 4.

2. Cumulative Impact Analysis

Background

While a single project may not result in a condition that results in unacceptable air quality impacts, the cumulative exposure to the RERC Project and other projects in Riverside County may result in cumulatively significant health impacts.

Data Requests

2.a Please perform a cumulative impact analysis and include air quality impacts from the following sources:

2.a.i The adjacent City of Riverside Wastewater Treatment Plant ("WWTP");

2.a.ii The adjacent City of Riverside WWTP cogeneration plant;

2.a.iii Any and all other sources that have received permits authorizing construction, but are not yet in operation; and

2.a.iv Any and all sources which have commenced operation, subsequent to the data used to establish background air quality levels, *i.e.* after the year 2002.

3. Potential Operating Scenario

Background

A full understanding of the RERC Project's planned operating scenario is essential to understanding the RERC Project's impacts. As CEC staff noted in its first set of data requests and at the May 25, 2004 Informational Hearing and Workshop, the Application does not provide a consistent operating scenario for the RERC Project. During the May 25, 2004 data request workshop, in response to staff's first data request, the Applicant stated that the design basis hours of operation will be 1,330 hours per turbine per year.

At the May 25 Informational Hearing and Workshop, the Applicant noted that due to expiring contracts and population increases, the City's energy demand and supply scenario is expected to change significantly over the next decade. For purposes of an accurate and full impact assessment under CEQA that includes an analysis of "reasonably foreseeable" phases of the project, a full understanding of how the operation of the RERC Project will fit into this demand/supply scenario is critical.

Data Requests

3.a Please verify that the Applicant is willing to accept a Condition of Certification ("COC") that limits operation of the plant to 1330 hours per year per turbine.

3.b Please provide all analyses or documents that consider operating the RERC Project for more than 1330 hours per year per turbine.

3.c Please provide all resource plans for the City of Riverside, documenting demand (peak, average, total energy served, etc.) and all sources of supply (peak capacity, reserves, total energy, etc.). Resource plans should be provided for every year for which plans have been prepared.

  3.c.i Please disclose the RERC Project's anticipated operating scenario, including number of hours per year, during each year from 2005 through 2035.

  3.c.ii Please provide all documents that support your answer.

3.d Please provide the schedule for all energy supply contracts that will expire beginning in 2006, and the capacity and energy that these contracts provide. Please provide documentation to support your responses.

3.e Please provide any and all documents that relate to the RERC Project's potential operating scenario.

4. Number of Workers

Background

The Application states that "no more than five" people will be working at the facility at any given time (Application, p. 238), but it does not provide an explanation of how the Applicant arrived at that number.

Data Requests

4.a Please disclose how many workers will be hired to operate the plant.

4.b Please provide a job description for each of the workers who will be hired to operate the plant, including whether such position is a full-time or part-time position.

4.c Please explain whether the plant will be staffed on a 24/7 basis.

AIR QUALITY

5. WATER INJECTION VS. DRY LOW-NOX BURNERS

Background

The Applicant proposes to use water injection into the combustion turbine generators to control NOx emissions to 25 ppmv at 15 percent oxygen ("O_2") before further reduction through the selective catalytic reduction ("SCR) system. (Application, p. 71.) Because NOx formation during combustion increases exponentially with flame temperature, by adding water or steam, the flame temperature decreases and NOx emissions fall as well. A drawback to water injection is that a reduction in flame temperature also tends to increase CO emissions.

Since the mid-1980s, gas turbine manufacturers have been offering dry low-NOx ("DLN") combustors, which produce low NOx emissions without the addition of water or steam and without the drawback of higher CO emissions. A combination of DLN combustors with SCR plus a CO catalyst are generally considered BACT for natural gas-fired gas turbines. Such DLN combustors are available and have been used in simple-cycle facilities. For example, the CalPeak Power Border facility in San Diego; the CalPeak Power Panoche facility in Firebaugh; the GWF Energy Tracy Peaker Power Plant in Tracy, CA; and the PG&E Dispersed Generating Company Chula Vista facility in Chula Vista, CA; all operate simple-cycle natural gas-fired turbines with DLN combustors, SCR, and a CO oxidation catalyst. In addition, General Electric has recently introduced a DLN combustor for the LM6000 gas turbine (proposed for the RERC Project), available in early 2005.[1] This GE DLN combustor has a demonstrated simple-cycle efficiency greater than 40%, which at full power does not exceed NOx emissions of 15 ppm.

The South Coast Air Quality Management District ("SCAQMD") requires the application of Best Available Control Technology ("BACT") for any new or modified emissions unit resulting in an emissions increase of any non-attainment air contaminant, any ozone-depleting compound, or ammonia. The SCAQMD's BACT Guidelines[2] define BACT as the most stringent emission limitation or control technique which:

> (1) has been achieved in practice for such category or class of source; or
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> (2) is contained in any state implementation plan (SIP) approved by the United States Environmental Protection Agency (EPA) for such category or class of source. A specific limitation or control technique shall not apply if the owner or operator of the proposed source demonstrates to the satisfaction of the Executive Officer or designee that such limitation or control technique is not presently achievable; or
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> (3) is any other emission limitation or control technique, found by the Executive Officer or designee to be technologically feasible for such class or category of sources or for a specific source, and cost-effective as compared to measures as listed in the Air Quality Management Plan (AQMP) or rules adopted by the District Governing Board.

The Applicant did not conduct a BACT analysis for the RERC Project, instead contending with no support at all that "[o]verall, the proposed emission rates reflect recently permitted simple-cycle projects in California, and are believed to reflect the lowest achievable emission rates for simple cycle turbines rated above three megawatts."

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[1] Live Power News, Christopher Smith, GE Introduces 15 ppm NOx DLE Combustor for the LM6000 Gas Turbine, May 26, 2004; http://www.livepowernews.com/stories04/0526/006.htm, accessed June 3, 2004.

[2] South Coast Air Quality Management District, Best Available Control Technology Guidelines, December 5, 2003.

Data Requests

5.a Please provide all reasons that justify the use of water injection in lieu of dry low-NOx combustors to control NOx emissions from the RERC Project gas turbines.

5.b Please provide all documents supporting your answer to Data Request 5.a.

6. AMMONIA SLIP

Background

Ammonia (“NH_3”) is a precursor for secondary particulate matter formation. The excess residual ammonia, the so-called ammonia slip, downstream of the SCR system reacts with sulfuric acid mist as well as nitrogen dioxide and water vapor in the stack gases and downwind in the atmosphere to form ammonium sulfate, ammonium bisulfate, and ammonium nitrate.

The Application states that “NH_3 emissions resulting from the use of SCR will be limited to 5 ppmv, based upon SCAQMD BACT standards.” (Application, p. 71.) However, lower ammonia slip levels can be readily and inexpensively achieved using a standard SCR system designed to meet a lower slip and, considering the non-attainment status of the South Coast Air Basin (“SoCAB”) for PM10, should be required for the RERC Project.

There are a number of facilities that are successfully operating with both low NOx and lower ammonia slip levels than proposed for the RERC Project. Massachusetts, Connecticut, Rhode Island, and other states have established 2 ppmv ammonia slip BACT limits for new power plants. For example, Rhode Island requires all power plant permit applicants to justify why they cannot achieve a 2 ppm ammonia slip for SCR as part of their BACT analysis. Several projects in Massachusetts and Connecticut have been issued Prevention of Significant Deterioration (“PSD”) permits specifying a NO_x limit of 2 ppmv achieved with a 2 ppmv ammonia slip, demonstrated using an ammonia CEMs and both averaged over 1 hour. Two of these facilities are currently operating with NH_3 slip levels less than 1 ppmv, demonstrated by CEMS. All of the major SCR vendors have long been offering performance guarantees of 2 ppmv Ammonia slip, averaged over one hour, to compete in the New England market.[3]

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[3] Phyllis Fox, personal communications with engineers at Peerless, Engelhard, Hitachi, and Mitsubishi, December 1999.

Further, several facilities in California similar to the RERC Project are now successfully operating at NOx levels of less than 2.5 ppmv and ammonia slip levels less than or equal to 1.5 ppmv at 15 percent O_2, *viz.* the Calpine Lambie, Creed, and Goose Haven Energy Centers in Suisun City, CA; all three simple-cycle peaker facilities with GE LM6000 PC Sprint gas turbines with water injection, SCR systems, and CO oxidation catalysts. (CARB 03/04[4], Appx. B.)

Data Requests

6.a Does the Applicant acknowledge that limits of 2 ppmv for ammonia and 2.5 ppmv for NOx at 15 percent O_2 have been achieved in practice in gas-fired simple-cycle power plants and are feasible for the RERC Project?

6.b If the answer to the above data request is no, please provide documentation to demonstrate why an ammonia slip limit of 2 ppmv at 15 percent O_2 is not technologically feasible for the RERC Project. In this case, please explain why the emissions measured at the Calpine Lambie, Creed, and Goose Haven Energy Centers in Suisun City, CA, do not individually establish BACT or collectively establish BACT for ammonia slip for the RERC Project. Please provide supporting data for any of these facilities that you believe do not demonstrate a lower ammonia slip limit than 5 ppmv at 15 percent O_2.

6.c There are two methods that can be used to meet a lower slip limit, increasing the volume of catalyst and using an oxidizing layer downstream of the SCR catalyst to convert ammonia to N_2 and water. The Application did not evaluate either of these two methods of meeting a lower ammonia slip limit than 5 ppm.

6.c.i A standard SCR system can be designed to include an oxidizing layer downstream of the SCR catalyst. The oxidizing layer would oxidize ammonia to nitrogen gas and water. Two major catalyst vendors are commercially offering this system for gas turbines, Cormetech and Engelhard. Near-zero slip levels can be readily and inexpensively achieved using this system. Please specifically evaluate the use of an oxidizing layer to meet an ammonia slip limit of 2 ppmv at the RERC Project.

[4] California Air Resources Board, Report to the Legislature, Gas-Fired Power Plant NOx Emission Controls and Related Environmental Impacts, Draft, 2003; http://www.arb.ca.gov/energy/noxlegrpt/, accessed June 3, 2004.

6.c.ii A lower slip limit can also be achieved by increasing the SCR catalyst volume. This approach was selected by Calpine in the permitting of its Towantic facility in Connecticut to meet a 2 ppmv ammonia slip limit. Please specifically evaluate increasing the volume of SCR catalyst to meet an ammonia slip limit of 2 ppmv at the RERC Project.

7. CO BACT

Background

According to the SCAQMD's 2003 Air Quality Management Plan ("AQMP"), the SoCAB, is one of few air basins in the nation that is still classified as nonattainment for carbon monoxide ("CO").[5] The AQMP states that the SoCAB technically achieved attainment in 2002, but the SCAQMD has yet to gain formal re-designation to attainment status for CO from the U.S. Environmental Protection Agency ("U.S. EPA"). (*Id.*) Until U.S. EPA makes such formal determination, the New Source Review ("NSR") Best Available Control Technology ("BACT") requirements apply to all new sources that emit CO in the air basin, including the RERC Project.

The Application indicates that "uncontrolled CO emissions are guaranteed to be less than 40 ppmv at 15 percent O_2, but often are less than 20 ppmv at 15 percent O_2." (Application, p. 71.) The Application further specifies the use of a CO catalyst to control these CO emissions by approximately 85 percent to 6 ppmv at 15 percent O_2. (Application, pp. 71 and 82.) The Application maintains that the use of a CO catalyst is considered BACT and that the proposed emission rate reflects "recently permitted simple-cycle projects in California, and [is] believed to reflect the lowest achievable emission rates for simple cycle turbines rated above three megawatts." (Application, p. 71.) However, CO emissions of less than 2 ppmv at 15 percent O_2 have been achieved in practice at other simple-cycle facilities.

The CARB has recently released a report summarizing permitting limits and operating experience with NOx control at gas-fired power plants. (CARB 03/04.) This report demonstrates that a number of simple-cycle facilities using GE LM6000 turbines with water injection and SCR (as proposed for the RERC Project) achieve CO emissions of less than 2 ppmv at 15 percent oxygen during source tests, *i.e.*, the New York Power Authority

[5] http://www.aqmd.gov/aqmp/docs/2003AQMPChap2.pdf, accessed June 3, 2004.

Hell Gate facility in Bronx, NY; the Calpine Lambie, Creed, and Goose Haven Energy Centers in Suisun City, CA; the Wellhead Power Gates facility in Huron, CA; the Wildflower Energy Indigo facility in Palm Springs, CA; the GWF Energy LLC Tracy Peaker Power Plant in Tracy, CA; and the Gilroy Energy Center Phase I in Gilroy, CA. (CARB 03/04, Appx. B.)

As discussed above, the SCAQMD's BACT Guidelines regard BACT as being "the most stringent emission limitation or control technique which: (1) has been achieved in practice for such category or class of source…" Consequently, considering the operating experience at similar facilities, a CO limit of 2 ppmv should be considered BACT for the RERC facility.

Further, the proposed CO catalyst, manufactured by Engelhard, Inc., is designed to meet, at a minimum, 95 percent control efficiency. (Application, p. 72.) At an inlet CO concentration of 40 ppmv, this catalyst is capable of reducing CO emissions to at least 2 ppmv. Consequently, the RERC Project could guarantee CO emissions to 3 to 4 ppmv at 15 percent O_2, if not lower, and still have an adequate margin of compliance.

<u>Data Requests</u>

7.a Please explain why the source tests for the New York Power Authority Hell Gate; the Calpine Lambie, Creed, and Goose Haven Energy Centers; the Wellhead Power Gates facility; the Wildflower Energy Indigo facility; the GWF Energy LLC Tracy Peaker Power Plant; and the Gilroy Energy Center Phase I do not establish CO BACT for RERC at 2 ppm or less. Please provide supporting data for any of these facilities that you believe do not meet a CO BACT limit of 2 ppm or less.

7.b Is the Applicant willing to accept a COC specifying a maximum CO concentration at a value less than 6 ppmv at 15 percent O_2? If the answer is no, please provide all information and documents that supports a CO BACT limit of 6 ppmv at 15 percent O_2, for the RERC Project.

7.c Are there any unique aspects of the RERC Project that would prevent it from meeting a CO limit of 2.0 ppmv, 3.0 ppmv, or 4.0 ppmv at 15 percent O_2 averaged over 3 hours? If yes, please identify each such constraint and provide all information and documents supporting your claim.

8. COOLING TOWER DRIFT RATE

Background

Cooling towers emit large volumes of low concentration particulate from multiple stacks that often represent a significant mass emission source. In a cooling tower, water is sprayed over contact media, called fill, as air is drawn counter-current or cross-current to the water stream. As the water is sprayed and evaporated, a large distribution of droplet sizes is created. A portion of these droplets, referred to as drift, will become entrained in the exit air stream and leave the cooling tower. These drift droplets and the solids they contain will be deposited downwind of the cooling tower. Inertial impaction devices called drift eliminators are used to control the emission of these drift droplets. High efficiency drift eliminators of modern design can control the drift to less than 0.0005 percent of the cooling tower circulating water flow. These drift eliminators are able to capture nearly 100 percent of the droplets which are larger than 10 microns ("µm") in diameter.

Considering the RERC Project's location in a PM10 non-attainment area, BACT is required for cooling tower emissions. The Application apparently used a drift rate of 0.001 percent for its cooling tower emissions calculations.[6] However, the BACT level on many recently licensed projects for cooling tower drift rate control has been established at much lower rates. The Applicant did not conduct a top-down BACT analysis for the cooling tower, instead selecting a model with a guaranteed drift rate of 0.001 percent with no support or explanation. Because high efficiency drift eliminators are widely used, they should be assumed technically feasible and cost effective for the RERC Project unless the Applicant documents unique circumstances.

The Tesla Power Project[7], Metcalf Energy Center[8], Contra Costa Power Plant Unit 8 Project[9], Delta Energy Center[10], and the Pittsburg District

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[6] The AFC did not specify the drift rate for the proposed cooling tower, model Evapco AT 314-0772, in its equipment description section nor did the manufacturer's specification sheet in Appendix 6.1-A contain this information. (See AFC, p. 72, and Appx. 6.1 A.) Review of the manufacturer's model specifications, available online, indicates that model AT 314-0772 is guaranteed for a cooling tower drift rate of 0.001 percent, consistent with the AFC's cooling tower emissions summary in Appendix 6.1-B. (*See* Evapco, Inc., Bulletin 350, AT Cooling Towers, Engineering Manual, undated, p. 31; http://www.evapco.com/, accessed June 2, 2004.)

[7] Bay Area Air Quality Management District, Final Determination of Compliance, Tesla Power Project, January 22, 2003.

[8] Bay Area Air Quality Management District, Final Determination of Compliance, Metcalf Energy Center, August 24, 2000.

[9] Bay Area Air Quality Management District, Final Determination of Compliance, Contra Costa Power Plant Unit 8 Project, February 2, 2001.

Energy[11] facilities, have been permitted to achieve guaranteed drift rates of 0.0005 percent to 0.0006 percent. The U.S. EPA and other air districts have likewise concluded that BACT for cooling towers is a drift eliminator efficiency of 0.0005 percent to 0.0006 percent. For example, in its comments on the Preliminary Determination of Compliance for the La Paloma Project, U.S. EPA specifically recognized the use of drift eliminators with a drift rate of 0.0006 percent as BACT.[12] These lower drift rates are readily achieved using two layers of drift eliminators, usually of the cellular type. For example, Brentwood Industries and Balcke-Dürr, both suppliers of cooling towers, guarantee drift rates as low as 0.0005 percent, using two-layer, cellular-drift eliminators.

Data Requests

8.a Is the Applicant willing to use a cooling tower with a guaranteed drift rate of 0.0005 percent?

8.b If the answer to Data Request 4.a is yes, please provide the specifications, *i.e.* manufacturer, model, engineering design parameters, etc., for the proposed cooling tower.

4.c If the answer to Data Request 4.a is no, please justify the choice of a drift rate of 0.001 percent. Please identify any constraints to the use of a drift eliminator that would achieve a drift rate of 0.0005 percent and support with vendor information, reports, and other sources. Please provide all documents that support your response.

9. CONSTRUCTION EMISSIONS

Background

On June 3, 2004, CURE received a CD-ROM entitled "Riverside Energy Modeling Files 04/30/04". This CD-ROM contains modeling input/output files for ambient air quality dispersion and health risk assessment modeling for the construction and operational phases of the RERC Project. The CD-ROM does not contain any files supporting the construction and operational emissions calculations reported in the

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[10] Bay Area Air Quality Management District, Final Determination of Compliance, Delta Energy Center, October 21, 1999.

[11] Bay Area Air Quality Management District, Final Determination of Compliance, Pittsburg District Energy Facility, LLC, June 10, 1999.

[12] Letter from Matt Haber, EPA Region IX, to Seyed Sadredin, SJVUAPCD, April 30, 1999.

Application summary tables nor does it contain any of the emission calculations contained in the Application, Appendices 6.1-A through 6.1-J. We understand that the Applicant is currently revising the air quality and health risk assessment modeling for the RERC Project based on data requests by CEC staff.

Data Requests

9.a Please provide an electronic copy of all construction (site, transmission line, substation) and operational emission calculations. Please include the "CEC-approved spreadsheet," used to calculate combustion emissions from construction equipment. (*See* Application, p. 84.)

9.b Please provide input/output files for ambient air quality dispersion modeling and health risk assessment for the construction and operational phases of the RERC Project.

9.c The construction emissions estimates as currently presented in the Application appear to have omitted pile-drivers, a major source of diesel exhaust emissions. (*See* Application, Appx. 6.1-D.) Pile drivers are typically used to construct the foundation for the plant, particularly for the turbine pads. Please include exhaust emissions from pile drivers in the revised construction diesel exhaust emission estimates.

10. CONSTRUCTION MITIGATION

Background

The Application states that "[e]nvironmental impacts will be mitigated through CEC-specified requirements and good management practices" and lists four mitigation measures that "may be applicable for the project." (Application, pp. 88/89.) This statement does not represent a binding obligation to implement any particular construction mitigation . The CEC must specify mitigation measures to be implemented and identify the extent to which they can be effective and reduce a certain impact.

The few mitigation measures specified in the Application are too general, *e.g.,* "[w]ater will be applied to the construction site to reduce fugitive emissions." Any mitigation measure must be specific and contain clear performance goals to be enforceable. In particular, the CEC must specify in a mitigation plan those mitigation measures that were assumed to calculate construction emissions. For example, the fugitive dust emission estimates from onsite vehicle travel on unpaved roads assume 90 percent dust suppression control efficiency. The CEC must specify in its mitigation plan how this control efficiency will be achieved, *i.e.,* the frequency of watering.

Data Requests

10.a Please develop a detailed construction mitigation management plan that specifies all mitigation measures to control diesel exhaust and fugitive dust emissions that will be implemented for construction of the RERC Project generating station as well as for construction of the transmission line and substation.

PUBLIC HEALTH

11. CONSTRUCTION EMISSIONS HEALTH RISK ASSESSMENT

Background

The Application presented a screening level health risk assessment for diesel exhaust emissions from construction with the Hotspots Analysis and Reporting Program ("HARP") published by the California Air Resources Board ("CARB"). The Application states that the HARP model results "reflect a 70-year lifetime exposure. The model results were divided by 70 in order to more accurately reflect the impacts of a short-term project." The Application compares the results to a significance threshold of 10 in one million and concludes that "health risks attributed to the construction projects with mitigated emissions are well below a level of significance." (Application, p. 223.) There are several problems with this approach and, consequently, the conclusion of non-significance.

First, the use of a shorter exposure duration, such as one year, is inappropriate because the unit risk factor for diesel exhaust is based on a lifetime exposure of 70 years. Any subdivision below a lifetime risk is inconsistent with the assumptions used to develop the unit risk factor. An intense, short-term exposure, such as occurs during construction, cannot be spread out over a 70-year period. Public agencies charged with protecting public health do not allow such risk dilution.

For example, the California Air Resources Board's ("CARB's") risk management guidance for diesel-fueled engines recommends the use of an exposure duration of 70 years, regardless of the actual duration of a project.

(CARB 10/00,[13] p. IV-2.) This policy has been adopted by air pollution control districts charged with implementing diesel exhaust risk reduction policies.

The SCAQMD's NSR toxic air contaminants rule, Rule 1401, also requires a lifetime exposure duration for cancer risk assessment. This rule stipulates that "The risk per year shall not exceed 1/70 of the maximum allowable risk specified in (d)(1)(A) or (d)(1)(B) at any receptor location in residential areas." (SCAQMD Rule 1401, § 1401(d)(4).) This is equivalent to a 70-year exposure duration for short-term exposures, expressed in terms of the significance threshold.

The Bay Area Air Quality Management District ("BAAQMD"), another major California air pollution control district, follows the same general policy as the SCAQMD. The BAAQMD has a general Risk Management Policy (BAAQMD 2/3/00[14]) applicable to all types of sources and pollutants, as well as a Diesel-Fueled Engine Risk Management Policy, applicable to diesel engines. (BAAQMD 1/11/02.[15]) Both of these policies require that any exposure to a carcinogen, no matter how short, be treated as though it were to continue for 70 years. Both of these policies stipulate: "The project is acceptable if the annual emissions associated with the project would result in an incremental cancer risk equal to or less than 1.0×E-06 (one in one million), *were the exposure to continue for 70 years*." [Emphasis added.] These policies are applied when estimating cancer risks from short duration events, such as construction and emergency diesel generators. See, for example, the risk assessment of construction emissions associated with a modification of the Valero Benicia Refinery.[16]

The Office of Environmental Health Hazard Assessment ("OEHHA"), the California agency responsible for developing health risk assessment guidance that is followed by other agencies, has long been concerned about the inappropriate use of short-term exposure durations when assessing cancer risk. OEHHA has published guidance that requires a 70-year

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[13] CARB, Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines, October 2000 (http://www.arb.ca.gov/diesel/documents/rmgFinal.pdf).

[14] Bay Area Air Quality Management District (BAAQMD), Bay Area AQMD Air Toxic Evaluation Procedure and Risk Management Policy, Updated February 3, 2000.

[15] Bay Area Air Quality Management District (BAAQMD), Bay Area AQMD Risk Management Policy for Diesel-Fueled Engines, Revised January 11, 2002.

[16] Bay Area Air Quality Management District (BAAQMD), Health Risk Screening Analysis, Valero Refinery, MTBE Phase Out Project, Diesel-Fueled Delivery Trucks During Project Construction, May 16, 2001.

exposure duration, but allows evaluations for 9 years and 30 years.[17] Diesel emissions during construction typically result in significant health risks when evaluated using an exposure duration of 9 years, the minimum allowed by OEHHA guidance.

Second, the significance threshold of 10 in one million used by the Application applies to projects that are constructed with BACT for Toxics ("T-BACT"). (SCAQMD Rule 1401, § 1401(d)(1)(B).) The Application contains no discussion of construction mitigation measures that would constitute T-BACT. Consequently, the CEC must require either a mitigation program which complies with T-BACT requirements as set forth in SCAQMD Rule 1401, or apply the significance threshold of one in one million specified in SCAQMD Rule 1401 at (d)(1)(A) for projects constructed without T-BACT.

And finally, the Application's statement that "model results were divided by 70 in order to more accurately reflect the impacts of a short-term project" appears to be inconsistent with the health risk analysis summary reported in Table 6.8-3. This table reports a Maximum Individual Cancer Risk ("MICR") of 6.22×10^{-7}, the same figure as the result reported from the HARP model run. (Application, Table 6.8-3, and Appx. 6.1-J.) If, in fact, the Application inappropriately used an exposure duration of only one year it would have substantially understated the true cancer risk of Project construction to off-site receptors. In this case, the actual estimated MICR would be 5.6×10^{-6} for a 9-year[18] and 4.4×10^{-5} for a 70-year exposure[19], respectively. Either MICR would exceed the significance threshold of one in one million for projects constructed without T-BACT; the 70-year exposure would also exceed the T-BACT threshold of 10 in one million.

<u>Data Request</u>

11.a Please clarify whether estimated health risks from construction diesel exhaust emissions were, in fact, adjusted by a factor of 70.

11.b If the answer to Data Request 7.a is yes, please revise the construction emissions health risk assessment to reflect a 9-year, 30-year, and 70-year exposure, consistent with agency guidance.

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[17] Office of Environmental Health Hazard Assessment, Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments, August 2003.

[18] $(6.22\times10^{-7}) \times (9) = (5.60\times10^{-6})$.

[19] $(6.22\times10^{-7}) \times (70) = (4.35\times10^{-5})$.

11.c Please specify all construction mitigation measures (in a construction mitigation plan) that would justify using the T-BACT significance threshold of 10 in one million. Or alternatively, evaluate health risks from RERC Project construction compared to the significance threshold of one in one million for projects constructed without T-BACT.

12. AQUEOUS AMMONIA TRANSPORT

Background

The RERC Project will have a 12,000-gallon storage tank with 19-percent aqueous ammonia on site. The Application performed an aqueous ammonia hazard assessment to determine offsite impacts to the public and found that the toxic endpoint for a 12,000-gallon aqueous ammonia release would be approximately 0.2 miles from the point of release. The Application concluded that there are several small businesses but no residential or sensitive receptors within this 0.2-mile worst-case release radial impact area. (Application, p. 221.)

The Application did not evaluate the potential hazards associated with transportation of the aqueous ammonia. There will be a heightened risk along the transportation route and, in the event of an accident that ruptures the tanker, people on either side of the transportation corridor could be harmed. Several schools and an assisted-care facility are located along Jurupa Avenue to the west of the RERC Project. The Application did not specify a preferred transportation route that would avoid transportation through Riverside and would minimize potential impacts to these receptors.

Data Requests

12.a Please identify the least hazardous transportation route.

12.b Is the Applicant willing to accept a COC, requiring transportation of aqueous ammonia along the least hazardous transportation route?